REPORT OF THE CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING ON MEDICAL SCHOOLS OF CALIFORNIA.

1 The Director of the Census states: "The cities of Los Angeles, Oakland, Berkeley and San Francisco have had such an exceptionally rapid increase that no estimates of their population have been prepared." The figures given are taken from the census of 1900.

2 "People are ready to pay for relief from distress and sickness. It is only fair to say that many of our graduates are earning as much in single months as they were formerly able to earn by a full year's work." (Catalogue, p. 9.)

3 During four months of 1909 there was a daily average of 44 free patients.

4 During four months of 1909 there was a daily average of 60.

5 During four months of 1909 there was a daily average of 55 city patients.

Population, 1,729,543. Number of physicians (exclusive of osteopaths), 4313. Ratio, 1:401.

Number of medical schools, 10.

LOS ANGELES: Population, 116,420.

(1) College of Physicians and Surgeons. Established 1903 as an independent school, it suddenly became, in 1909, nominally the medical department of the University of Southern California, when the former medical department of that institution cut loose in order to become the Los Angeles clinical department of the University of California. The seriousness with which the University of Southern California treats medical education may be gathered from this amusing performance.

Entrance requirement: High school graduation or "equivalent."

Attendance: 32.

Teaching staff: 41, 28 being professors. The teachers are practicing physicians; no one gives his entire time to the school.

Resources available for maintenance: Fees, amounting to $4075 (estimated).

Laboratory facilities: The school is ordinary in type. It possesses a small chemical laboratory, a single laboratory in common for pathology, histology, and bacteriology, with meager equipment and supplies, and no animals; a dissecting-room with sufficient anatomical material, and clay for modeling bones; a limited number of wet specimens, and a small number of books in a room that is locked, though opened to students on request. There is no laboratory for physiology or pharmacology. The building is new, attractive, and fairly well kept.

Clinical facilities: A considerable part of one floor is used for a dispensary. The rooms are poorly equipped and cared for; there is no clinical laboratory. The attendance is very small, for the neighborhood is decidedly well-to-do.

The school adjoins a private hospital in which many of the teachers are interested. It is, however, of no teaching use. The catalogue describes it as "not a charity hospital by any means . . . In fact it is a twentieth century classy hospital." For clinical instruction the students have access to the County Hospital, several miles distant, where the school has the use of 100 beds, holding clinics for senior students two days weekly. In surgery, students witness an operation without taking part in it; in medicine, the students make brief histories, which are, however, no part of the hospital records. Autopsies are done by the internes, who have no connection with the medical school. Students are not admitted to the obstetrical ward. Clinical facilities are thus extremely limited, for the management of the hospital is in no essential respect controlled by educational considerations.

Date of visit: May, 1909.

(2) University of California: Clinical Department. Up to March, 1909, this school offered a four-year course as the medical department of the University of Southern California; it has now become a second clinical department of the University of California, and will therefore offer after June, 1910, only the third and fourth years' work. See (6).

Clinical facilities: Its present facilities for offering the instruction of the last two years are, for a university department on a two-year college basis, distinctly meager. It enjoys at the County Hospital the same facilities as the local College of Physicians and Surgeons, i. e., access to 100 beds, two or three days weekly being devoted to clinics for the senior class. Additional opportunities, depending on the personal connections of members of the faculty, are usually of slight pedagogic value. The school has an excellent dispensary building, fairly equipped in certian respects, but indifferently conducted, though the attendance is good. It is also in close proximity to a good medical library. The clinical teachers are all local practitioners. The state university will incur no expense on account of this department for two years at least.

Date of visit: May, 1909.

(3) California Medical College. Eclectic. Organized at Oakland in 1879, this school has led a roving and precarious existence in the meanwhile.

Entrance requirement: Nominal.

Attendance: 9, of whom 7 are from California.

Teaching staff: 27, of whom 26 are professors.

Resources for maintenance: Fees, amounting to $1060 (estimated).

Laboratory facilities: The school occupies a few neglected rooms on the second floor of a fifty-foot frame building. Its so-called equipment is dirty and disorderly beyond description. Its outfit in anatomy consists of a small box of bones and the dried-up filthy fragments of a single cadaver. A few bottles of reagents constitute the chemical laboratory. A cold and rusty incubator, a single microscope, and a few unlabeled wet specimens, etc., form the so-called "equipment" for pathology and bacteriology.

Clinical facilities: There is no dispensary and no access to the County Hospital.

The school is a disgrace to the state whose laws permit is existence.

Date of visit: May, 1909.

(4) Los Angeles College of Osteopathy. Emigrated from Iowa in 1905. A stock company.

Entrance requirement: Less than an ordinary grammar school education, with conditions. Many of the students are men and women of advanced years.

Attendance: Began two years ago with 60, now claims "more than 250."

Teaching staff: 19. All the teachers are practitioners.

Resources available for maintenance: Fees, the

annual income being about $37,500 from tuitions and a considerable sum from "treatments" (see below). As the instruction provided is inexpensive, the stock must be a very profitable investment.

Laboratory facilities: The school occupies a five-story building containing a chemical laboratory, with meager equipment and limited desk space, and a single laboratory for histology, pathology, and bacteriology. The dissecting-room contains five tables, but sufficient material. The rest of the building is mainly devoted to treatment rooms and the business office.

Clinical facilities: There is no free dispensary. Patients who are willing to undergo treatment before a class pay not less than $3 a month; patients who are treated in the presence of a single student pay $5. A hospital is now under construction.

The general aspect is that of a thriving business. An abundance of advertising matter, in which the profits of osteopathy are prominently set forth,[2] is distributed.

Date of visit: May, 1909.

(5) Pacific College of Osteopathy. A stock company, established in 1896.

Entrance requirement Ostensibly high school graduation; but "mature men and women who have been in business are given a chance and usually make good."

Attendance: 85.

Teaching staff: 38, 19 being professors.

Resources available for maintenance: Fees, amounting to $12,750 (estimated).

Laboratory facilities: The school has an ordinary chemical laboratory, a fairly equipped laboratory for pathology, histology, and bacteriology, with a private laboratory for the instructor in these branches adjoining, the usual dissecting-room, and a limited amount of apparatus for experimental work in physiology.

Clinical facilities: A dispensary is carried on at the school, which also owns a hospital for obstetrical and surgical cases. The catalogue fails, however, to state that the students have no regular work in this hospital. They rarely see medical cases; "they don't have as much acute work as they should." Nevertheless, they are drilled to "treat gonorrhea by diet and antiseptics; syphilis with ointments and dietetics, and without mercury; typhoid, pneumonia, etc.," along the same lines.

Date of visit: May, 1909.

OAKLAND: Population, 73,812.

(6) College of Medicine and Surgery. Established 1902 as a stock company, stock partly subscribed by merchants of the town.

Entrance requirement: "High school or equivalent."

Attendance: 17.

Teaching staff: 32, 13 being professors. There are no full-time teachers.

Resources available for maintenance: The school lives on fees, amounting to $2760 (estimated), and on contributions from the faculty.

Laboratory facilities: It occupies a new, well kept building, has a small laboratory for experimental physiology, small separate laboratories for bacteriology, histology, and pathology, a beautiful, though not extensive, collection of pathological specimens, a laboratory for chemistry, a dissecting-room with provision for modeling, and a small library of slight value. Though there are no full-time teachers, there is evidence of active interest in pathology. Post-mortems are abundant and are intelligently used, through a fortunate connection of the instructor in pathology.

Clinical facilities: In respect to both dispensary and hospital, the clinical facilities are decidedly inadequate.

Date of visit: May, 1909.

SAN FRANCISCO: Population, 355,919.

(7) University of California Medical Department. Established as such 1872. An organic department of the university. The first and second years' work is given at Berkeley. See (2).

Entrance requirement: Two years of college work, strictly enforced.

Attendance: 36, all but 2 from California.

Teaching staff: 60, of whom 12 are professors. The laboratory courses at Berkeley are given by full-time teachers.

Resources available for maintenance: The department shares the university funds, its budget calling for $33,396. The total receipts from fees are $7004.

Laboratory facilities: The equipment and instruction are of the highest quality. The laboratories, though temporary in structure, are completely fitted up, in charge of high-grade teachers, abundantly provided with assistants and helpers. The sole question to be raised concerns the medical atmosphere, which, in several departments, is not strongly in evidence. In consequence, post-mortem work has not been hitherto cultivated, though abundant opportunities for it exist. The biological point of view prevails. This is not the case with anatomy, the teaching of which—thoroughly scientific in method and spirit—frankly meets the main purpose of the students.

Clinical facilities: Clinical instruction is given in San Francisco. The university hospital, its main reliance, is small but modern. It contains 75 beds, practically all available for instruction.[3] Bedside teaching is carried on; but post-mortem work for the benefit of the students is meager. Some additional clinical work is procured at hospitals maintained by the city and by the United States government. In general, the laboratory and clinical departments are not as yet effectively correlated. The teachers of the third and fourth years are, excepting the dean, practitioners who are not in touch with the laboratory work and ideals as realized at Berkeley. Efforts are, however, making to bridge the gap.

The hospital is unfortunately situated from the standpoint of a dispensary; such material as there is, is not well used from a teaching point of view. The students do not in all departments take an active part in the dispensary work. For example, in some of them they have nothing to do with making up the records, which are separately kept in the several departments. No report, showing the number or the distribution of cases, is obtainable.

Date of visit: May, 1909.

(8) Leland Stanford Junior University School of Medicine, on the Cooper Medical College Foundation. Until 1908, the Cooper Medical College offered a four-year course based on high school graduation. Its property has now been deeded to Stanford University, its buildings being the seat of the clinical department of Stanford University School of Medicine, the instruction of the last five semesters being given in Cooper hall and Lane hospital. That of the first three semesters is given at Palo Alto. As its present classes graduate, the Cooper Medical College passes out of existence and its faculty disbands.

Entrance requirement: Three years of college work.

Attendance: 16 in first year (fourth collegiate year). No other year's work has yet been given.

Teaching staff: 21, of whom 16 are professors. Six professors and one assistant professor give their entire time to medical work. The clinical professors thus far chosen have been taken from the former faculty of the Cooper Medical College.

Resources available for maintenance: The department will share in the general income of the university. A special library endowment amounts to about $250,000.

Laboratory facilities: These are provided at Palo Alto on the same scale as other departments there (anatomy, pharmacology, bacteriology, physiology, physiological chemistry). The school has an unusually valuable library of some 35,000 volumes and receives the main current medical periodicals, American and foreign.

Clinical facilities: Clinical work on the part of Stanford University is not yet begun. The university now owns the Lane Hospital of 125 beds, which has hitherto been conducted as a pay institution. Patients paying $10 a week are used for clinical teaching; seventy-odd beds are thus available, part of these being temporarily supported by the city.[4] The hospital is now under temporary control of Cooper Medical College until needed by the university. Its organization at present, from the teaching point of view, is seriously defective. Records are meager; no surgical rounds are made in the wards; obstetrical work exists only in the form of an out-patient department; post-mortems are scarce. No hospital report is obtainable. The catalogue statement that the hospital is a teaching hospital is hardly sustained by the facts.

The dispensary in the college building adjoining had in 1907 an attendance of 20,000, including both old and new cases. But the material, though adequate in amount, was not thoroughly used by the Cooper Medical College.

Date of visit: May, 1909.

(9) College of Physicians and Surgeons. Established 1896. An independent school.

Entrance requirement: "High school education or equivalent."

Attendance: 70.

Teaching staff: 53, 23 being professors. There are no full-time teachers.

Resources available for maintenance: The institution has no resources but fees, amounting to $7715 (estimated).

Laboratory facilities: The school has no laboratories worthy the name.

Clinical facilities: There are no adequate clinical or dispensary facilities.

Date of visit: May, 1909.

(10) Hahnemann Medical College of the Pacific. Established 1881. Homeopathic. An independent school.

Entrance requirement: "High school graduation or equivalent."

Attendance: 23.

Teaching staff: 35, 13 being professors, none of them full-time teachers.

Resources available for maintenance: The institution has practically no resources but fees, amounting to $2685 (estimated).

Laboratory facilities: The school occupies a small, well kept building containing the usual dissecting-room, a laboratory for elementary chemistry, one fairly equipped laboratory in common for histology, bacteriology, and pathology, and a small orderly library.

Clinical facilities: Several neatly kept but inadequately equipped rooms are set aside for a dispensary; the attendance is fair, the records meager. The main clinical reliance now is on a small number of beds paid for by the city in the Hahnemann Hospital, a modern institution close by.[5]

Date of visit: May, 1909.

GENERAL CONSIDERATIONS.

"Consideration of medical education in California may well start from the fact that, without taking into account the osteopaths—who abound—the State has now one physician to every 401 inhabitants, that is, in round numbers, about four times as many doctors as it needs or can properly support. Such an enormous disproportion can hardly be rectified within less than a generation; it makes radical measures in the interest of sound medical education not only immediately feasible, but urgently necessary.

"Legal enactment fixing a sound basis for future practitioners of whatever school, the grant of authority to the state board to close schools flagrantly defective in either laboratory or clinical facilities, or the institution of practical examinations for license, any one of these measures would at once wipe out at least seven of the ten existing schools, with distinct advantage to the public health of the state. As none of these schools has the resources indispensable to meet the rising tide in medical education, this outcome is in any case inevitable; legal regulation of the type indicated would merely hasten the day.

"Even then the situation of medical education in the state is not altogether clear. The University of California has not yet solved its problem. The sums it now devotes to medical education are relatively small; its clinical facilities in San Francisco are inadequate; it has not effectively organized what it there offers; it has not brought about team work between the two severed branches that constitute the department. If now it has proved difficult to perfect an organization covering two places separated by San Francisco Bay, what reason is there to be confident when the distance involved is five hundred miles? Nor does any practical need compel a step educationally questionable. The attendance in Los Angeles in the last two years on a high school or equivalent basis is less than thirty; it will fall still lower when the two-year college basis is enforced and transplantation from Berkeley to Los Angeles is required at the beginning of the third year. Moreover, the clinical prospects are by no means up to the university standard. The dispensary may indeed be adequately developed, but one hundred beds in the general medical and surgical wards of an old-fashioned public hospital, however supplemented by courtesies elsewhere, constitute a fragile support for a university department of medicine. The difficulty of controlling the teaching at Los Angeles by the scientific ideals of the university at Berkeley can hardly be overstated. Finally, with the present needs of the clinical department at San Francisco, it is not likely that the university can divert to Los Angeles the sums necessary to create a satisfactory department there. The move is explained on the ground that peculiar conditions exist in the state; it is, however, not clear why a long, narrow state is educationally in any different plight from a short. broad one; in either case, needless multiplication of medical schools is economically wasteful and professionally demoralizing.

"The university has undertaken to dominate two detached clinical departments, manned by local practitioners. There is nothing in the present status of detached clinical departments of this type to encourage confidence in the outcome. Before too far committing itself to this policy, it is at least worth inquiring into the advisability of concentrating its medical instruction across the bay, where a population of over two hundred thousand affords sufficient clinical material, and where a compact, effective, and organically whole university department of medicine, with a faculty, laboratory and clinical, selected on educational principles, could be readily developed.

"These considerations apply in some respects with equal force to the action of Stanford University in

taking over the Cooper Medical College at San Francisco. It is well enough to offer the laboratory sciences at Palo Alto, where the resources and ideals of the university insure high-grade instruction; but the entrance of the university into the San Francisco field in all probability portends the division and restriction of whatever opportunities the city may hereafter create. Lane Hospital can be developed into a teaching hospital of adequate size if very large sums are available for the purpose; its organization and conduct have been in the past pedagogically very defective; and the clinical professors so far appointed have been taken with one exception from the former Cooper faculty. With one university medical school already on the ground, a second—and a divided school at that—is therefore a decidedly questionable undertaking. There is no need of it from the standpoint of the public; it must, if adequately developed, become a serious burden upon the finances of Stanford University. If the experience of other schools and cities is to be heeded, the question arises whether Stanford would not do well to content herself with the work of the first two years at Palo Alto, and to co-operate with the state university in all that pertains to the clinical end.

"The situation just presented deserves to be studied carefully by all interested in medical education. What has happened in California is likely to happen elsewhere. Scores of schools are beginning a desperate struggle for existence. Their first impulse is to throw themselves into the lap of some prosperous university. The universities, not as yet themselves realizing that medical education is no longer profitable or self-supporting, are prone to complete themselves by accepting a medical department as an apparent gift. From the standpoint of the university this blunder will soon prove a serious drain, as increased expenditure on instruction and reduced income from fees reveal the actual state of affairs. From the standpoint of medical education and practice, the tendency in question is still more deplorable. The curse of medical education is the excessive number of schools. The situation can improve only as weaker and superfluous schools are extinguished."—(From "Medical Education in the U. S.," by Abraham Flexner, published by the Carnegie Foundation.)

THE CARNEGIE FOUNDATION REPORT.

The Carnegie Foundation was established in 1905 by Andrew Carnegie to provide allowances and pensions for teachers in colleges and universities coming up to the standards fixed by the Foundation.

Under the guidance of President Henry S. Pritchett, the functions of the Foundation soon exceeded Carnegie's original purpose. After beginning with the investigation and standardizing of the numerous colleges and universities it was gradually extended to the critical study of medical institutions. Hence the masterful report on medical education by Abraham Flexner, a report which presents in no equivocal terms an indictment of American medical education.

The medical schools of the country were previously investigated by the Council on Medical Education of the American Medical Association and by the Association of American Medical Colleges, but the findings of these bodies were largely statistical. Never before the advent of Flexner had a thorough and scientific investigation been made at the hands of a pedagogic expert.

The Carnegie report is divided into two parts. In the first the history and status of medical education in this country are clearly outlined. Here we find an account of the genesis and gradual development of that shameless American product—the greedy, predatory, short-cut, proprietary medical school, with its consequent over-production of uneducated and untrainable practitioners. These fraudulent, dishonest methods inveigle the naive, poorly equipped matriculant, follow and contaminate him during his much abbreviated annual courses, and then foist him upon the unsuspecting public to bring discredit, if not disgrace, upon the title of M. D.

How could it be otherwise when the stream is polluted at its source; if colleges seek to enrich themselves by wholesale violation of the laws regulating the practice of medicine and fail even to observe the conditions of their own published announcements? In business such methods are considered violations of contract and are made amenable to the criminal code. The practice, however, has prevailed for so many decades in the medical schools of this country that the element of fraud no longer surprises.

The fact that in no country of the world is charlatanry of every kind more rife or profitable than in the United States could not be brought too close to the door of the medical faculties, nor too soon to the knowledge of the public, whose sympathy and co-operation are indispensable for the success of any broadly devised educational movement. Indeed the public is beginning to realize the criminal side of the reckless overproduction of cheap doctors.

Special chapters of the report are devoted to, 1st, the growth and influence of laboratory courses (this part of the report will be made the subject of an additional review), which make the student respect facts, learn how to obtain them and how to utilize them; 2nd, the history and role of clinical teaching, "the outcome of which is in the end the supreme test of a medical school"; 3rd, the financial aspect of medical education, in which is demonstrated the necessity of state control, which would make it impossible for any institution to engage in medical education on any other than the best terms that the state is in a position to enforce.

The cost of running any one scientific department of the first two years of medicine in a satisfactory manner for classes of fair size approximates $10,000 annually, and then only meagre provision is made for any scientific activity on the part of the teachers. Experience shows that the yearly support of a legitimate medical school, in addition to the cost of maintaining its hospital, demands nearly two hundred thousand dollars.

Very significant in this respect is the increasing modern movement to relate medical education to the general system of schools of the nation, the trans-